

INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i>				ATTY DOCKET NO.		APPLICATION NO.	
				018 997703		10/729,628	
				APPLICANT(S)			
				Pal et al.		GROUP ART UNIT	
FILING DATE				12/04/2003		3737	
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	3,619,671	11/9/1971	Shoh	310	325	12/29/1969	
	3,830,240	8/20/1974	Antonevich et al.	128	328	7/21/1972	
	3,861,391	1/21/1975	Antonevich et al.	128	328	3/20/1974	
	4,016,436	4/5/1977	Shoh	310	8.2	12/10/1975	
	4,180,074	12/25/1979	Murry et al.	128	276	3/15/1977	
U.S. PATENT APPLICATION PUBLICATIONS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS							
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
	WO 92 07687 A	5/14/1992	PCT	B24B	1/04		✓
OTHER DOCUMENTS (Including Author, Title, Date, Portinent Pages, Etc.)							
		G.V. Pflitsyn et al.; "Ultrasonic Equipment for Machining Holes on Drilling Machines" 1980, Stanki I Instrument, Vo. 51, Issue 4, pp. 31-32					
		John Mortimer; "Ultrasonics Will Machine Tomorrow's Materias" 1/15/1970, The Engineer					
EXAMINER				DATE CONSIDERED			
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance; and not considered. Include copy of this form with next communication to applicant.							

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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		4,472,840	9/25/1984	Jefferies	3	1,9	9/30/1982	
		4,537,511	8/27/1985	Frei	366	127	3/28/1984	
		4,600,005	7/15/1986	Hendel	128	304	8/22/1984	
		4,657,548	4/14/1987	Nichols	623	10	5/1/1986	
		4,747,820	5/31/1988	Horalein et al.	604	22	4/9/1986	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
			"Ultrasonic Drilling with Diamond Impregnated Probe" Ultrasonics, Volume 2, January - March 1964					
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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		4,870,953	10/3/1989	DonMichael et al.	128	24	11/13/1987	
		4,881,761	11/21/1989	Hornlein et al.	285	239	5/26/1988	
		4,951,653	8/28/1990	Fry et al	128	24	3/2/1988	
		4,988,334	1/29/1991	Hornlein et al.	604	22	5/26/1988	
		5,111,822	5/12/1992	Dory	128	660.03	5/16/1989	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS								
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							YES	NO
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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,152,763	10/6/1992	Johnson	606	86	4/2/1991	
		5,230,334	7/27/1993	Klopotek	128	399	1/22/1992	
		5,240,675	8/31/1993	Wilk et al.	422	22	9/24/1992	
		5,295,484	3/22/1994	Marcus et al.	128	660.03	5/19/1992	
		5,304,115	4/19/1994	Pfueger, Russell et al.	604	22	1/11/1991	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
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							YES	NO
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EXAMINER				DATE CONSIDERED				
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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,344,435	9/6/1994	Turner et al.	607	101	11/5/1990	
		5,368,037	11/29/1994	Eberle et al.	128	662.06	2/1/1993	
		5,513,662	5/7/1996	Morse et al.	128	898	1/21/1994	
		5,549,638	8/27/1996	Burlette	607	97	5/17/1994	
		5,551,448	9/3/1996	Matula et al.	128	897	7/21/1994	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
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INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i>				Pocket Number (Optional) 018.997703		Application Number 10/729,628		
				Applicant(s) Pal et al.				
				Filing Date 12/4/03		Group Art Unit 3737		
U.S. PATENT DOCUMENTS								
*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,556,379	9/17/1996	Wolfharger	604	49	2/27/1995	
		5,597,345	1/28/1997	Young	451	165	6/20/1994	
		5,601,526	2/11/1997	Chapelon et al.	601	3	12/21/1992	
		5,628,743	5/13/1994	Cimino	604	22	12/21/1994	
		5,657,760	8/19/1997	Ying et al.	128	660.03	1/11/1996	
U.S. PATENT APPLICATION PUBLICATIONS								
*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS								
	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
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OTHER DOCUMENTS <i>(including Author, Title, Date, Pertinent Pages, Etc.)</i>								
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Form PTO-A820
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P03/HRV05

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SHEET 6 OF 11

INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i>				ATTY DOCKET NO. 018,997,703		APPLICATION NO. 10/729,628		
				APPLICANT(S) Pal et al.				
				FILING DATE 12/04/03		GROUP ART UNIT 3737		
U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,695,500	12/9/1997	Taylor et al.	606	130	4/6/1994	
		5,697,932	12/16/1997	Smith et al.	606	80	11/9/1994	
		5,711,299	1/27/1998	Manwaring et al.	128	653.1	1/26/1996	
		5,725,478	3/10/1998	Saad	600	157	3/14/1996	
		5,730,372	3/24/1998	Bradley	241	29	4/29/1996	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
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U.S. PATENT DOCUMENTS								
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,730,719	3/24/1998	Edwards	604	22	8/28/1996	
		5,779,644	7/14/1998	Eberle et al.	600	463	9/11/1996	
		5,797,871	8/25/1998	Wolfenbarger, Jr.	604	49	5/7/1996	
		5,810,765	9/22/1998	Oda	604	31	6/5/1995	
		5,820,581	10/13/1998	Wolfenbarger, Jr.	604	49	3/21/1996	
U.S. PATENT APPLICATION PUBLICATIONS								
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	5,871,514	2/16/1999	Wiklund et al.	607	36	8/1/1997	
	5,871,515	2/16/1999	Wiklund et al.	607	36	8/27/1998	
	5,897,578	4/27/1999	Wiklund et al.	607	36	8/27/1998	
	5,902,264	5/11/1999	Toso et al.	604	27	4/25/1997	
	5,919,215	7/6/1999	Wiklund et al.	607	36	8/27/1998	
U.S. PATENT APPLICATION PUBLICATIONS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
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FILING		12/04/03						
U.S. PATENT DOCUMENTS								
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,938,615	8/17/1999	Eberle et al.	600	463	9/23/1997	
		5,950,629	9/14/1999	Taylor et al.	128	897	4/28/1994	
		6,022,354	2/8/2000	Mercuri et al.	606	80	12/4/1998	
		6,045,555	4/4/2000	Smith et al.	606	80	12/10/1997	
		6,080,155	6/27/2000	Michelson	606	61	2/27/1995	
U.S. PATENT APPLICATION PUBLICATIONS								
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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		6,204,592	3/20/2001	Hur	310	323.12	10/12/1999	
		Re33,590	5/21/1991	Dory	128	660.03	11/22/1998	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
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A. CLASSIFICATION
IPC 7 B23B37/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B23B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 92 07687 A (KOPP VOLKER OSWALD ;KOPP OSWALD (DE)) 14 May 1992 (1992-05-14) page 14, paragraph 2 -page 15, paragraph 1 figure 8	1
A	G. V. PTITSYN ET AL.: "ultrasonic equipment for machining holes on drilling machines" 1980, MELTON MOWBRAY, LEICESTERSHIRE XP002207433 51 the whole document	1
A	JOHN MORTIMER: "ultrasonics will machine tomorrow's materials" 15 January 1970 (1970-01-15) XP002207434 5947 the whole document	1

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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *C* earlier document but published on or after the international filing date
- *I* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

1 later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

25 July 2002

Date of mailing of the international search report

12/08/2002

Name and mailing address of the ISA
European Patent Office, P.O. Box 2911, D-69111 Heidelberg
Tel: (+31 70) 340-3000, Fax: (+31 70) 340-3010

Authorized officer

Fiorani, G

Form PCT/ISA/210 (second sheet) (July 1992)

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 02/01017

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	"ultrasonic drilling with a diamond impregnated probe" January 1964 (1964-01) XP002207435 368 the whole document	1